

**IN THE ABSTRACT**

An apparatus for replacing at least a portion of an intervertebral disc in a spinal column includes: a first member having a first vertebral contact surface for engagement with an endplate of a first vertebral bone in the spinal column and a first articulating surface having a single saddle surface; and a second member having a second vertebral contact surface for engagement with an endplate of a second vertebral bone in the spinal column and a second articulating surface having a single saddle surface wherein: an intervertebral disc space is defined substantially between the first and second endplates of the first and second vertebral bones, and the first and second members are operable to articulate relative to one another, when disposed in the intervertebral disc space, about at least one of: (i) a first center of rotation for at least one of flexion and extension that is located above the first and second articulating surfaces outside the intervertebral disc space, and (ii) a second center of rotation for lateral bending that is located below the first and second articulating surfaces outside the intervertebral disc space.